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THE COSMOLOGICAL ASPECT OF FREUD'S THEORY OF INSTINCTS*

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Quite early Freud recognized that the instincts are the most fundamental forces of the psyche. To him they appeared as dynamic factors which, arising out of the soma, beget the powerful forces of great needs in the mental apparatus. He realized that the greatest part of our psychic activity is dedicated to the direct or indirect satisfaction of these needs. It soon became necessary, therefore, to define the concept of instinct. An instinct represents for us a psychosomatic duality. Engendered in organic matter it represents a psychic force, and its concept defines a palpable transition from the physical to the mental. Its impulse we experience psychically; its dependence upon the physical we can prove by physiological experiment. The psychology of instincts is, therefore, that part of the theory of psychic phenomena which seeks the most direct relation to the somatic science of physiology. This relation it has partially found. With his psychology of instincts Freud has built the first firm bridge to a unified science of body and mind. Here for the first time psychology with all its devious ramifications becomes a part of that science which takes living phenomena as the object of its research, becomes, therefore, a part of biology.

It was inevitable that to an investigator like Freud, so deeply imbued with the desire for knowledge, these questions should arise: whence do the instincts themselves take their origin? What mysterious meaning finds expression in them? What do they represent, and when did their first manifestation in living matter begin? All parts of these questions are so deeply buried in the origin of things, recede so far into the beginnings of life that even a great bold thinker like Freud experienced a slight apprehension and a cautious

hesitancy in undertaking to answer them. As a consequence, the fourth chapter of "Beyond the Pleasure Principle" begins: (1) "What follows now is speculation; speculation often far-fetched, which each will according to his particular attitude acknowledge or neglect. Or one may call it the exploitation of an idea out of curiosity to see whither it will lead."

The uncanny and compulsory need to repeat childhood experiences during the psychoanalytic treatment pointed out the answer to this question. This repetition compulsion is intelligible in reference to pleasurable things, but most painful things are subject to it as well, daimonically compelled to repeat themselves by some mysterious law. The fatal compulsion to repeat ruinous constellations and unhappy experiences which, as if guided by some magic hand, strike down in the same manner so many unfortunates who must unconsciously submit themselves to them, lies on the same plane of thought. In a similar manner the individual who has been reduced by the shock of some disaster to the confusion of traumatic neurosis is compelled to repeat in torturing anxiety dreams during sleep the experience which caused his suffering.

Freud named this remarkable and apparently senseless effort of the mind "repetition compulsion", and he knew how to make it intelligible: if stimuli break into the mental apparatus which the latter is not strong enough to master—we call them traumatic stimuli—the mental apparatus tries to gain control over them by subsequently working them through and thus gradually demolishing their destructive and disturbing influence through repetition. The repetition compulsion, however, has the daemonic, inevitable, compulsive, craving nature of an instinct. It may be called an instinct. A bold and short step led conversely to an interpretation of the instinct itself as a compulsion to repeat. Freud then gave to the instinct this deeply significant formulation: "An instinct is the inner urge of a living organism to reinstate some earlier condition."

An instinct therefore tries to recapture something which living matter has lost. Our first conclusion drawn from this realization is, that one state which organic matter has abandoned is the *inorganic* state, a compulsion to return to this state becomes therefore possible, but the attainment of it we call *death*. The instinct which has death for its aim, and which attains to it, if only by circuitous routes through the whole course of a life-time, and so is satisfied, is called the death-instinct. From the dawn of living being it is there, and would from this earliest beginning force living matter to destroy itself. But this short path is blocked by the attempt to reinstate other conditions which matter attained to, after it had become alive, and out of which it had been more recently driven. These strivings, which are instincts again, put themselves between the original inorganic state and its prompt reinstatement after matter has once become alive. Whenever something brings about a change in living matter it occasions new strivings for restoration of the past and therefore new instinctual forces.

An instinct is therefore found only where some state of the past has had to give way to a new set of circumstances, and therefore where living matter was obliged to change itself so that it could run through its prescribed course of repetition of the past which ends in death. Thus state succeeded state, new adaptations created new cravings for the restoration of the past, and the fullness of instinctual life grops after its origin through the whole succession of events which attended upon its development.

The paramount example of repetition compulsion is the embryonic development, where, in organic processes, all the complicated states, attempts at adaptation and modifications because of changed conditions which the animal species previously experienced and endured are revealed. To each condition one may attribute, just for the sake of illustration, an attempt at repetition, which is psychologically operative as an instinct, and thus vividly illustrate for oneself the overwhelming effect of the past upon the present in all its complications.

The forces which compelled the changes in the condition of living matter, however, came from without in the shape of great catastrophes, and only two of them can we imagine in their magnitude: the dessication which threw life out of a watery existence onto land, and the glacial period, which according to a theory of Freud, inhibited sexual instincts and directed them into cultural channels, and which repeats itself psychologically in the dichronous onset of sexual development as the latency period. (2) The others are hidden from us, but we must think of them as equal to these in nature and in force. It is cosmic events which stamp their indirect impression in our strivings to repeat, which want to reinstate the condition which preceded change. *It is the relation of the earth to the sun, which alone is life-giving, that stands legible in the organic repetition and in the instincts, if only we knew how to read the script.*

Here Freud builds his scientific speculation out and upwards to the stars. The possibilities which such a construction as this involves make a thinking man stand in awe. Out of the instinctual behavior of man we should be able to body forth the cosmic happenings of aeons past! East step of the embryonic development harbors some yet unravelled secret of the cosmic past.

In every realm of science the indirect method of investigation becomes more refined. We seek more and more remote territories, hitherto believed completely inaccessable, on the road to interpretation of directly observable phenomena in order to illuminate them with the light of our intellect and broaden the scope of things we know. The boldest and most powerful of these attempts is this proposed cosmological interpretation of Freud. In this speculation on the psychology of instincts Freud forces us to recognize the union of microcosm and macrocosm in the individual. The whole stream of man's most inner life, the energy of his deepest strivings and emotional experiences seem determined thousands of years before by cosmic events. In instinctual behavior we should be able to recognize processes in the uni-

verse and changes in the relationships of the heavenly bodies out of the remotest past! With this possibility Freud's scientific thinking has reached a breadth of range, an intensity of perception and a boldness in establishing relationships which up to now we have ascribed only to poetic insight. An enormous field, not only in the vastness of space and time, but also in the possibility of thought and investigation is opened up by the simple formulation of "Beyond the Pleasure Principle": (3)

> "But in the last report it must have been the evolution of our earth, and its relation to the sun, that has left its imprint on the development of organisms. The conservative organic instincts have absorbed every one of these enforced alterations in the course of life and have stored them for repetition; they thus present the delusive appearance of forces striving after change and progress, while they are merely endeavoring to reach an old goal by ways both old and new."

Here for the first time does the influence of the stars upon the life of man become something more than astrological fancy, and the ancient idea of man that his fate is written in the stars acquires a new meaning through the powerful thinking of sigmund Freud.

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NOTES

(1) Freud, Sigmund, Beyond the Pleasure Principle, London, Hogarth Press, 1922.
(2) Freud, Sigmund, The Ego and the Id, London, Hogarth Press, 1927.
(3) Beyond the Pleasure Principle, p. 46f.

FREUD'S SCIENTIFIC BEGINNINGS.

by

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The childhood phantasies and the adolescent day dreams of Freud, as far as we know them, do not foretell the future originator of psychoanalysis. They fit a general, a reformer or a business executive rather than the patient, fulltime listener to petty complaints, humdrum stories and the recounting of irrational sufferings. It was a long way from the child who devoured Thier's story of Napoleon's power; who identified himself with the Marshall Massena, Duke of Tivoli and Prince of Essling, to the psychoanalyst who cheerfully admits that he has, in fact, very little control even over those symptoms and disturbances which he has learned to understand so well. Twelve years old, he still thinks of himself as a candidate for cabinet rank and, as an adolescent, he plans to become a lawyer, and to go into politics. Then, at seventeen, shortly after his graduation from high school, Freud suddenly retreats from his search for power over men. "The urge to understand something about the mysteries of the world and maybe contribute somewhat to their solution became overwhelming". (1) He turns to the more sublime power over nature, through science, and he decides to study "natural history"—biology to us today. Power, prestige and wealth should come to him only contingent to his being a great scientist.

Great he had to be. "I fear mediocrity," he says in a remarkable letter to a friend, in the days of the final examination. (2)) This friend had recently tried to console him: "He who only fears mediocrity is quite secure". "But," answers Freud, "at night—June 16, 1873 . . . . with a somewhat somnolent philosophy. . . . Secure from what, I

must ask; certainly not secure and assured that one is not mediocre? What does it matter whether you fear something or not? Isn't is most important that what we fear is true? Quite true that even stronger minds are gripped by doubts of themselves; is therefore anyone who doubts his own merits a strong mind? He may be a weakling in intellect, but an honest man withal—because of education, habit, or even self-torture. I don't want to ask you to mercilessly dissect your reactions whenever you find yourself in some doubtful situation, but if you do it, you will see how little certainty there is within you. The magnificence of the world is founded on this multitude of possibilities, only that is unfortunately no strong basis for knowing ourselves."

In the fall of 1873, with high ambitions and vague ideas and plans, he registered at the University of Vienna. He chose the medical department (Medizinische Fakultaet) which combined what we call here the pre-medical curriculum and the medical school proper. It was the place of training for physicians as well as for future research men in biology—the field in which Freud's hopes lay. In sharp contrast to the closely supervized and rigidly regimented life and learning at the gymnasium (high-school), the university offered an almost complete freedom from disciplinary rules. Students, who like Freud, craved for knowledge could satiate their thirst freely, without concern for grades and credits, in any one of the many lectures, seminars and labs. Few rigid requirements were laid down, and between the Matura (graduation from high-school) and the first comprehensive examination for the M.D. the student could enjoy several years of unmitigated "freedom of thought", a condition of which Freud took good advantage, in his first three years. He indulged in varied and chaotic studies and, as he has repeatedly confessed, turned out to be a dismal failure, particularly in chemistry and zoology. In his third year he settled down in Brücke's Institute of Physiology and, with few interruptions, staid there for six years. He passed, in 1881, with great delay, but in one stretch, the examinations required for

the M. D. diploma. In 1882, when he was twenty-seven, he left Brücke's Institute for economic reasons and prepared himself for private practice in neurology. During these nine university years Freud published five scientific papers and the translation—from English—of a volume of essays.

These scientific beginnings Freud has treated summarily with a few lines in his autobiographical writings. Brun (3) and Gray (4) have carefully listed them and Brun, (3) Dorer (5) and Jeliffe (6) have given a brief evaluation of some of them. In the following pages I will give a more thorough report on them together with information I have been able to gather on the scientific situations in which they were planned and written and on Freud's teachers and their institutes. (7) I have tried to evaluate the merits of the papers in their time and their place in Freud's scientific evolution. I will not limit myself strictly to the 1873 to 1882 period but will include in this study four papers which were written and published during the years 1883 and 1884, for they belong to Freud's beginnings as elaborations or continuations. I will further discuss his physiological efforts in 1878 and 1883 which have not resulted in papers and are unknown to Brun, (3) Jeliffe, (6) Gray (4) and Dorer. (5)

I. ZOOLOGY.

Freud's efforts in zoology resulted in a paper on the testes of the eel. (8) This first scientific study by Freud, though his second publication, provides the opportunity to confront Freud's deprecatory judgment about himself as a zoologist with an opinion independently arrived at.

The sex life of the common eel had been a puzzling problem since the days of Aristotle; in 1876 it still seemed unsolved. "No one ever has found a mature male eel—no one has yet seen the testes of the eel, in spite of innumerable efforts through the centuries". (8) In 1874 Dr. Syrski had announced the most recent solution. He had discovered a small

lobed organ and described it as the testes of the eel. Carl Friedrich Claus, chief of the Institute for Comparative Anatomy in Vienna, assigned to his student Freud the task of checking Syrski's observations. (Though Claus' main interest was in coelenterta and crustaceae, the problem of the eels was closely linked to his own earlier studies on hermaphroditism in animals.) (9) Freud dissected 400 eels, finding the Syrski organ in many of them. On microscopic examination he found the histological structure of the organ such that it could well be an immature form of the testes, though he found no definite evidence that this was the case. (8)

This study is inconclusive. Although it is written in a precise and animated style, always self-assured—at places, even cocky—its content is neither exciting nor brilliant. Still it is by no means proof as Freud asserts "that the peculiarities and limitations of my gifts denied me all success in many of the departments of science into which my youthful eagerness had plunged me. Thus I learned the truth of Mephistopheles' warning: 'It is in vain that you range around from science to science; each man learns only what he can learn.'—*Faust,* Part I." (10)

Claus obviously thought well of the young scientist. In the fall of 1873 Claus had come from Goettingen to Vienna with the intent and assignment to modernize the zoological department. One of his pet projects was a marine laboratory, and in 1875 he succeeded in founding the Zoological Experiment Station in Trieste, according to the patriotic official *History of Zoology and Botany* in Austria, "one of the first institutions of its kind in the world". Claus had sufficient funds at his disposal to send a number of students to Trieste for several weeks of study and research twice a year. Among an early group, in March 1876, was Freud. Such a trip to the shores of the Adriatic, at the department's expense, was certainly much sought after and the assignment was valued as a reward or a distinction. In fact, Anna Freud Bernays remembers, more than half a century later, this grant as an important episode in the life of her brother Sigmund. (11)

In September of the same year Claus renewed Freud's assignment. He procured for Freud the needed eels of the larger size which appear only late in the season from October through January. On March 15, 1877 Claus had already presented Freud's paper to the Academy of Sciences and had it published in the April issue of the Bulletin of the Academy. Of course he would have enjoyed announcing that his institute had solved the old problem of the reproduction of eels for good. Yet he knew too well how progress in science inches ahead in a long succession of just such indecisive, unexciting little papers. Nothing shows that he was disappointed in his student's work.

In fact, Syrski's claim soon was confirmed. The lobed organ which he had discovered is the testes of the eel. Freud's paper was the first of a series which accumulated the evidence. (12) But this did not change Freud's hostile attitude toward his first scientific study. Twenty years later Freud had privately printed the list of his thirty-eight scientific writings in order to set forth his scientific merits in the hope of furthering his promotion to the position of professor extraordinarius. Though the abstracts were brief, never exaggerated, sometimes even understated, they did put forward the results, the new findings or new aspects of each of the items. Regarding the first paper on this list he says: "Dr. Syrski had recognized a lobed . . . organ as the long searched-for testes of the eel. On the suggestion of Professor Carl Claus I have, in the Zoological Station in Trieste, investigated the occurrence and the histological structure of this lobed organ." (13)

This is not merely a modest understatement. Were this a review by a colleague, the author would be justified in complaining of malicious falsification. In the meantime Freud had obviously learned that Syrski's discovery had been recognized by the zoologists, due to his own investigation, among others. His abstract, however, leads one to believe that Syrski's recognition occurred prior to Freud's study; and under this assumption, of course, his paper appears to be

utterly futile, aimless, and pointless, for which, in revenge, Claus bears the responsibility. (This abstract, it should be noted, is the only one in which the suggesting teacher is mentioned!)

This condemnation of his own zoological efforts, which the student felt so intensely and the old man never corrected, seems even stranger when we consider that in method, general scientific goals and spirit, the institutes of Claus and Brücke were alike. The studies in the comparative anatomy of the nervous system which Freud conducted to his own satisfaction under Brücke differed in topic only from his research in zoology.

Was the topic so repulsive to him that he felt devoid of the ability to deal with it? The eighteen-seventies were prudish and hypocritical and the moral standards of Freud's family were strictly Victorian; Freud shared them with conviction. In her old age, his sister still complains that he had not permited her to read the improper writers, Balzac and Dumas. (11) Or is it just one of those strange coincidences that the discoverer of the castration complex wrote his very first paper on the missing testes of the eel, and let almost twenty years go by before he gave sexuality another scientific thought?

Or was, perhaps, the teacher and the atmosphere in Claus' Institute the source of his discontent? Of Brücke's Institute Freud says: "Here I found the teachers whom I could take as my models", (10) intimating clearly that the conditions for finding himself and his talents had been lacking in the preceding years. Claus was a scientist of great reputation; "his works in zoology . . . take the first place amongst the zoological text books of the present day" says Adam Sedgwick in the English translation of Claus' "Zoology". He was a very stimulating teacher—ambitious, intent and able to create emulation in his students. He was, like Brücke, a Darwinist, a conscientious worker and an ardent physicalist; narrower and of smaller scientific stature than Brücke, but not narrow and not small. Of course, the ways of ad-

miration and affection are mysterious, at least, as long as we cannot enlist the cooperation of the subject for a psychoanalytical investigation of his preferences. However, we might guess at one factor in the complex picture though we cannot estimate its relative weight. Brücke was Freud's senior by forty years, while Claus held his powerful position as a comparatively young man only twenty years older than Freud. Brücke was the contemporary of Freud's father. Claus was the same age as Freud's half-brother. These are irrelevant data which ought not to influence one's success or failure in any given field. They ought not—quite true—but they do, in the average student as well as in the singularly gifted one. From Freud's self-analysis we know that in his early childhood in Freiberg he concentrated all his love, admiration and trust on his father, and had shifted his distrust and rebellious and hostile attitudes to the brother, yet without ceasing to love him. (14) The young man accepted guidance and criticism from the old Brücke—"the greatest authority I ever met"—as he had admiringly and with awe looked up to his father in those early childhood years in Freiberg. Toward the younger Claus he may have felt that same mixture of love and hostility, of admiration and distrust, which had colored his relationship to his half-brother. Tempted to rebellion and competition, inhibited by the wish to learn and by genuine appreciation for the teacher's ideas and achievements, he lived in an irritating atmosphere full of frustration, doubts and comparisons. This was sharply contrasted by the inner peace in which he could learn and grow to self-esteem under an authority which was unchallenged and unsuspect. How to grow away to full independence from such an authority in later years then becomes a problem which has destroyed and distorted many a talent; but not Freud's. In 1876, when he exchanged zoology for physiology, this test was still six years away.

II. HISTOLOGY OF THE NERVE CELL.

The Viennese medical student of the Seventies was re-

quested to attend the classes of Ernst Brücke on "physiology and higher anatomy", and was expected to work at least one short term in Brücke's Institute of Physiology. Freud was little concerned about requirements, but in search of a teacher and a field for his ambitions he tried Brücke and stayed on for six years. "I was stuck there", as he puts it. In this institute he not only worked to his own and Brücke's complete satisfaction, but what he experienced there was of such singular importance to him that in his autobiographical comments this period of his life is the one of which he speaks in unrestrained superlatives as "the happiest years". What the reasons for this gratitude were we do not know. But we can say with certainty, that it was during these six years that Freud acquired or developed to maturity those qualities which were to become characteristic of him as a scientist.

It has been shown that in fundamentals as well as in many details the Freudian concepts and theories have their roots in the Brücke Institute; that, to a certain degree, they are transformations of the ideas and methods Freud had learned there. (15) This justifies my giving in extenso on the following pages, the background in which Freud worked during these years although the papers published in this period might, in themselves, not deserve so much space.

The Physiological Institute was miserably housed in the second story and basement of a dark and smelly old gun factory. (16) It consisted of a large auditorium and of two rooms—one of them being Brücke's office—with two windows each. The microscopes for the freshmen students had their place in the auditorium. Further, there were a few small cubicles, some without any light, serving as electro-physiological, chemical and optical laboratories. Of those, some adjoined the auditorium and Brücke's office in the second story. Others were in the basement. The animals were kept in a shed in the yard. There was no gas and no water. All heating had to be done over a spirit lamp and the water was brought up from a well in the yard. This was the job of the janitor who carried one bucketful up the two stories

every morning and deposited it in the large room in which he doubled as the mechanic and which he shared with Brücke's two assistants, the professors Fleischl and Exner, and with their famuli. Yet, this institute was the pride of the medical school due to the number and distinction of its foreign visitors and students.

In fact, Brücke's Institute was an important part indeed of that far-reaching scientific movement best known as Helmholtz' School of Medicine. The amazing story of this scientific school started in the early forties with the friendship of Emil Du Bois-Reymond (1818-1896) and Ernst Brücke (1819-1892) soon joined by Hermann Helmholtz (1821-1894) and Carl Ludwig (1816-1895). From its very beginning this group was driven forward by a veritable crusading spirit. In 1842 Du Bois wrote: "Brücke and I pledged a solemn oath to put in power this truth: 'No other forces than the common physical chemical ones are active within the organism. In those cases which cannot at the time be explained by these forces one has either to find the specific way or form of their action by means of the physical mathematical method or to assume new forces equal in dignity to the chemical physical forces inherent in matter, reducible to the force of attraction and repulsion.'" (17)

These men formed a small private club which in 1845 they enlarged to the *Berliner Physikalische Gesellschaft.* Most of its members were young students of Johannes Müller—physicists and physiologists, banded together to destroy, once and for all, vitalism, the fundamental belief of their admired master. Strangely enough, Johannes Müller did not mind. On July 23, 1847, at the meeting of this society, Helmholtz read a paper on the principle of the conservation of energy—with the modest purpose of giving a sound foundation to the new physiology. Thus, casually, started the career of one of the leading physicists of the century. Du Bois, Brücke, Helmholtz and Ludwig remained lifelong friends. Within twenty-five or thirty years they achieved complete domination over the thinking of the Ger-

man physiologists and medical teachers, gave intensive stimulus to science everywhere, and solved some of the old puzzles forever. As for vitalism—they lived long enough to see it rise again in 1890. However, in the seventies they and their physiology were a power not yet seriously challenged.

Brücke, whom in Berlin they called "Our Ambassador to the Far East", kept, in his Viennese classes, very close to his elaborate notes. These, in 1874, he published as Lectures in Physiology. The first forty pages contain, in substance, the general ideas of the physicalistic physiology which captivated the student Freud.

Very briefly they are: Physiology is the science of organisms as such. Organisms differ from dead material wholes in action—machines—in possessing the faculty of assimilation but they are all the phenomena of the physical world; systems of atoms, moved by forces, according to the principle of conservation of energy formulated by Helmholtz; the sum of forces (motive forces and potential forces) remains constant in every isolated system. The real causes are symbolized in science by the word "force". The less we know about them, the more kinds of forces do we distinguish; mechanical, electrical, magnetic forces, light, heat. Progress in knowledge reduces them to two—attraction and repulsion. This applies as well to the organism man. Contrary to Descartes, one cannot believe that the perpetual changes which we experience and which happen to our ego are not the effect of external causes. Brücke then turns to an elaborate presentation in two volumes of what was then known about the transformation and interplay of physical forces in the living organism. I do not know how better to describe the spirit and content of Brücke's lectures than with the words which Freud used in 1929 to characterize phychoanalysis from its dynamic standpoint: "The forces assist or inhibit one another, combine with one another, enter into compromises with one another, etc."

Very closely connected with this dynamic aspect of Brücke's physiology was its evolutionistic orientation. The

organism is not only a part of the physical universe, but the organismic world itself is one family. Its apparent diversity is the result of divergent developments which started with the microscopic unicellular "elementary organisms". It includes plants, lower and highest animals, as well as man, from the hordes of the anthropoids to the peak of his contemporary western civilization. In this evolution of life, no spirits, essences, or entelechias, no superior plans or ultimate purposes are at work. But the physical energies alone cause effects—somehow. Darwin had shown that there was hope of achieving in a near future some concrete insight into this "How" of evolution. The enthusiasts were convinced that Darwin had shown more than that—in fact had already told the full story. While the sceptics and the enthusiasts fought with each other, the active researchers were busy and happy to put together the family trees of the organisms, closing gaps, rearranging the taxanomic systems of plants and animals according to genetic relationships, discovering transformation series, finding behind the manifest diversities the homologous identities.

This physiology was a part of the general trend of western civilization. Slowly, continuously, it had risen and grown everywhere through the preceding two or three hundred years, steadily gaining momentum from the end of the eighteenth century and increasing rapidly in velocity and expansion after the eighteen thirties. This trend, weaker in Germany than in England and France, was interrupted there from about 1794 to 1830 (from the great to the little French revolution) by the period of *Naturphilosophie* (philosophy of nature). (18)

Naturphilosophie is the name of the pantheistic monism, close to mysticism, which, professed by Schelling—repeated, developed and varied by a host of writers—was eagerly accepted by the average educated man and literary lady. The Universe, Nature, is one vast organism, ultimately consisting of forces, of activities, of creations, of emergencies—all these—organized in eternal basic conflicts, in polarity; reason,

conscious life, mind, being only the reflection, the emanation, of this unconscious turmoil. These ideas have been expressed before and since and contain the seeds of some of the scientific theories of the nineteenth century and of our time. But it is not the ideas which are characteristic of the movement nor the romantic temper which envelopes them. This was a general European trend. What characterizes the *German Naturphilosophie* is the aspiration expressed in the name "speculative physics" (which Schelling himself gave to his endeavors) and the unbalanced, megalomanic emotionalism of the fantasy and of the style of these writers. Fechner praised "the gigantic audacity" of Oken, a prominent representative, while a sober English historian puts it thus: "They exhibit tendencies that seem foreign to the course of European thought; they recall the vague spaciousness of the East and its reflection in the semi-oriental Alexandria".

Physicalistic physiology—although not by itself—overthrew philosophy and took its place. As has happened before, the conqueror introjected the emotionalism of his victim. "Unity of science", "science", "physical forces" were not merely directing ideas or hypotheses of scientific endeavor; they became almost objects of worship. They were more than methods of research—they became a *Weltanschauung*. The intensity of this temper varied with scientist to scientist; from place to place. In Berlin with Du Bois-Raymond it was at the maximum, strangely mixed with Prussian nationalism. In Austria, *Naturphilosophie* never had much power, therefore the physiology-fanaticism was at a minimum in Vienna and with Brücke. Yet it was there.

Brücke's writings cover a long span of time and a wide variety of topics. They begin in 1841 with the physiology of stereoscopic phenomena and end in 1892 with a pamphlet on how to protect life and health of one's children. Among them are classical pieces of research on the movements of mimosa pudica, the color change of chameleons, the structure of the "elementary organism", the biochemistry of urine, while the bulk—well over one hundred and twenty books and pa-

pers—were of more or less transitory importance only. He himself used to say: "A scientific truth lasts five years at most". Amongst these papers are many which, in terms of physicalistic physiology, deal with problems of psychology and social psychology: seeing, hearing, language, poetry and art. The following list of his publications during the six years in question gives only a faint impression of this variety:

1. The Sources of Ammonia in Distilled Water. (1876)
2. Suggestions Concerning Improvement of Drinking Water Through Heating. (1876)
3. The Absorption Spectra of Potassium Permanganate and its Uses in Quantative Analysis. (1876).
4. A Contribution to Thermo-dynamics. (1877).
5. Fragments of a Theory of the Formative Arts. (1877)
6. Voluntary Movements and Cramps. (1877)
7. The Schistoskop. (1877)
8. Some Sensations Belonging in the Field of the Optical Nerves. (1878)
9. The Relationship between the Formation of Spontaneous Oil Emulsions and of the So-called Myelin Sheah. (1879)
10. Some Consequences of the Young-Helmholtz Theory. (1879)
11. Training in the Classical Languages is Necessary for Physicians. (1879)
12. The Metric Accentuation in Verses. (1879)
13. Nitrogen and Sulpha-containing Non-cristalizable Acid
14. Obtained by Treatment of Chicken Protein with Potassium Permanganate. (1881)
15. Action in Painting and Sculpture. (1887)
16. The Determination of Urea with Oxalic Acid. (1881)

Brücke preferred that the student presented his own plans and projects but he was quite ready to formulate a problem for those beginners who were too timid or too vague in their interests. Freud belonged in the latter group when he entered the Institute as famulus (which is about the equivalent of a postgraduate research fellow) in 1876—probably in the fall, on his second return from Trieste. Brücke

set him behind the microscope on work concerned with the histology of the nerve cells. This topic obviously was part of Brücke's great interest in "psychology".

Freud formulated, a few years later, the general situation as he found it in this field in the following words: "Very soon after the recognition of the nerve cells and of the nerve fibres as the fundamental parts of the nervous system began the efforts to clarify the finer structure of these two elements, motivated by the hope of using the knowledge of their structure for the understanding of their function. As is well known, up to now neither sufficient insight nor agreement has been reached in either of these two directions. One author thinks of the nerve cell as granulated, the other as fibrilose; one thinks of the nerve fibre as a bunch of fibriles but another as a liquid column. Consequently while one elevates the nerve cell to the basic source of nervous activity another degrades it to a mere nucleus of the Schwann sheaths". (19)

Together with the problem of the structure of the nervous elements goes the interesting question of whether the nervous systm of the higher animals, at least of the vertebratae, is composed of elements different from the nervous system of the lower animals; or whether the simple and the complicated systems alike are built of the same units. This topic was highly controversial at that time. The philosophical and religious implications seemed to be very disturbing. Are the differences in the mind of higher and lower animals only a matter of degree of complication? Does the human mind differ from that of some mollusce—not basically but correlative to the number of the nerve cells in both and the complication of their respective fibres? Scientists were searching for the answers to such questions in the hope of gaining definite decisions—in one way or another—on the nature of man, the existence of God and the aim of life.

Into this vast and exciting field of research belonged the very modest problem which Brücke put before Freud. In the spinal cord of the Amoecetes (Petromyzon), a genus of fish belonging to the primitive Cyclostomatae, Reissner

had discovered a peculiar kind of large cell. The nature of these cells and their connection with the spinal system elicited a number of unsuccessful investigations. Brücke wished to see the histology of these cells clarified. After a few weeks Freud came up with the quite unexpected discovery that the roots of the posterior nerves originated in some of these Reissner cells. Although this find did not explain the nature of the cells, it did promise a simple solution and eliminated the various hypotheses current in the literature. Brücke, it seems, thought that this was good enough for a beginner, and pressed for publication. Freud obliged by hurriedly putting together a report. (20) His dissatisfaction with the unfinished work, however, is noticeable in many places in the paper. In style and organization it is far below the paper on the eels and of the succeeding publications of his student years. Brücke filed the study with the Academy of Science at its meeting of January 4, 1877. It appeared in the January bulletin of the Academy.

Freud continued on his thorough investigation of the Reissner cells, and published a second report on Petromyzon in July of the following year. (21) Here he assembled an amazingly complete bibliography—eighteen pages of his report deal with the literature. This historical conscientiousness was not quite favorable to the young scientist's ambitions: "I must accuse myself of having falsely thought that I was the first one to describe—based on direct and certain observations—, the origin of the posterior nerve roots in certain cells of the petromyzon. Only shortly after the publication of my paper did I find in Stieda's abstracts of the Russian literature an abstract of a paper by Kutschin which contains important information on the origin of the posterior root. Due to the friendliness of Professor Stieda in Dorpat, who had sent me the Russian paper, I could examine the pictures by Kutschin and satisfy myself that Kutschin had seen, already in 1863 in his preparations, convincting proof of the origin of the posterior roots in the posterior cells. By way of apology I can only say that

Kutschin's statements—perhaps because his pictures were not available to the German histologists—were quite generally overlooked''. Thus was not Brücke wrong after all, to insist on the publication of the preliminary paper?

Aided by an improvement in the technique of the preparation, Freud established definitely that the Reissner cells ''are nothing else than spinal ganglion cells which, in these low vertebratae, where the migration of the embryonic neural tube to the periphery is not yet completed, remain within the spinal cord.'' (21) ''These scattered cells mark the way which the spinal ganglion cells have made throughout their evolution.'' (13) This solution of the problem of these cells is a triumph of precise observation and genetic interpretation—one of the thousands of such small achievements which have finally established among scientists the conviction of the evolutionary unity of all organisms.

But Freud made even a major discovery on Petromyzon: ''The spinal ganglion cells of the fish were known for a long time to be bipolar (possessing two processes) while those of the higher vertebratae are unipolar.'' This gap between higher and lower animals Freud has closed. ''The nerve cells of Petromyzon show all transitions from uni- to bipolarity including bipolars with T-branching''. This paper, in content, presentation, and implication is without any doubt well above the beginner's level. Brücke filed it with the Academy on July 18, 1878 and it appeared in its Bulletin, eighty-six pages long, the next month.

The same general problem is the aim of Freud's next investigation which he conducted by his own choice in the summer months of 1879 and 1881. This time the objects are the nerve cells of the crayfish. Here he examines the live tissues microscopically—a technique which, at that time, was as yet very little used, undeveloped and difficult—and he reaches the definite conclusion that the nerve fibres have without exception fibrillose structure. He recognizes that the ganglion consists of two substances, of which one is net-like, and the origin of the nerve processi. This study, (22) which

Freud himself filed with the Academy of Sciences at the meeting of December 15, 1881 and which appeared in the Bulletin of the Academy in January 1882, excells in the choice of its method, the exacting care given to its development, the caution shown in the argumentation, the direct approach to the key problem as well as in its precise, definite and significant results.

With this paper and the two preceding ones Freud has done his share to pave the way for the neuron theory. One might safely go even a little further and claim, as did Brun (3) and Jeliffe, (6) that Freud had early and clearly conceived the nerve cells and the fibrils to be one morphological and physiological unit—the later neurones. In his research papers he confined himself strictly to the anatomical viewpoint, although he makes it clear that his investigations were conducted with the hope of gaining insight into the mystery of nerve action. Only once, in a lecture on "the structure of the elements of the nervous system" (23) which summarizes his work, does he venture into this land beyond histology with the one paragraph: "If we assume that the fibrils of the nerve fibre have the function of isolated conductive pathways then we may assume that the pathways which are separated in the nerve fibre are confluent in the nerve cell; then the nerve cell becomes the bginning of all those nerve fibres which are anatomically connected to it. I would transgress the limitations which I have imposed on this paper were I to assemble the facts which are in favor of that assumption; I know that the existing material is not sufficient for a decision on this important physiological problem; yet if that assumption could be proved we would take a great step in the physiology of the elements of the nerve system. Then we could consider the possibility that the nerve as a unit conducts the excitation".

This lecture Freud delivered at the psychiatric society—within a year after he left the Brücke Institute—in 1882 or 1883. It was published in the Jahrbücher für Psychiatrie early in 1884. Here he gives to a broad audience of physi-

cians—not to specialists in nerve histology—an account of the general problem situation in which his highly specialized investigation originated. He details his methods and his findings and in a few sentences he intimates the far reaching vistas opened by his results. We find here the same caution and boldness, the same style of argumentation which characterizes the many accounts of his findings in psychoanalysis which Freud later gave to audiences unfamiliar with the goals, methods and experiences of the specialist. The first lecture of this kind shares with its successors the condensation of complex nets of facts and of complicated chains of thought in a few simple and lucid sentences. But in contrast to them this lecture contains sharp criticism of opponents. Although in controlled language, they are quite out of keeping with his previous and later characteristic aloofness.

Amongst his victims is Fleischl, his friend and teacher in the Brücke Institute. He dissects and rejects a study of Fleischl's on the structure of the fibres, though in gentle words, but thoroughly, resorting even to the method of the agonistic use of psychological interpretation; pointing out what the psychological motives of the observer might be, which lead him to an erroneous foundation for his findings. One wonders whether the dissatisfaction and frustration caused by his leaving the institute did not break through his usual contained literary attitude.

Should this be true or not—the polemic against Fleischl serves us as a reminder that the anticipation of the neuron theory with which we credit Freud was not implied in the teaching of Brücke and his staff. Although this theory is in the spirit of their teaching, neither Brücke nor Fleischl nor probably Exner and Paneth had at that time directed their thoughts in this direction. It seems they were Freud's own. Still it ought to be stressed that Freud had no part in the actual development of the neuron theory. His histological papers were noticed and occasionally quoted by some neuro-anatomist. They certainly served to create for him the reputation of a coming young man but they had hardly any

influence on the course of research and theory. His physiological ideas condensed into one little paragraph hidden away in a popular lecture to phychiatrists most certainly was not even noticed. It had to wait for a friendly biographer to be discovered.

III. NEW METHODS.

Freud's success in the histology of the nerve cells was greatly facilitated, if not made possible, by an improvement in technique on which he hit in 1877, soon after he entered the Institute of Physiology. He writes in a brief "Note on a Method for the Anatomical Preparation of the Central Nervous System" dated May 26, 1879: (24) "I use Reichert's mixture as I have modified it for the purpose of preparing in a guaranteed and easy way, the central and peripheral nervous system of the higher vertebratae (mice, rabbits, cattle) . . . I have tried the method with the cerebral nerves of infants—Professor Dr. E. Zukerkandl kindly participating. We have found that it considerably facilitates the preparation of nerves situated in the bone channels and in the preparation and disentanglement of anastomoses and nerve nets. . . Furthermore, I used it successfully for the preparation of phlegm and perspiration glands, pacini bodies, hair-roots, etc."

This is evidence of the scope of Freud's studies which surpassed the problem on which, on Brücke's suggestion, he worked at that time. The new technique, moreover, helped him in his days as a "demonstrator" at the Institute of Physiology. The equivalent of a teaching assistant, this position required him to prepare the anatomical specimens and histological slides for the classes of Brücke and his assistants.

Freud's modification of the Reichert formula prescribes the mixture of one part of concentrated nitric acid, three parts of water and one part of concentrated glycerine. It seems that nobody outside the institute gave any attention whatsoever to this invention. In fact to call it an invention—

although logically correct—may sound like idolatry, a weakness quite common to biographers of great men. However to Freud this modest achievement was the first realization of a high ambition. Six years later he returns with a second effort to this field.

"Innumerable methods were devised by histologists which proved themselves useful in the hands of their inventors only—this is why I have decided to publish even the pettiest directions" of a "new histological method for the study of nerve tracts in the brain and spinal cord". (25) This method Freud had developed in the fall of 1883. At that time he had left the institute of Brücke, prepared himself for private practice and took time out for research in Meynert's Institute of Brain Anatomy.

Freud was convinced of the usefulness of this new method. He praises the "wonderfully clear and precise picture" which one receives if one carefully follows his way of dyeing the brain preparation with gold chloride. The results achieved were far superior to any other dye technique known at that time and he was satisfied with its complete reliability. No longer does he speak modestly of having "hit on it". This method he had laboriously and successfully developed in many experiments following a hint which Flechsig had published in 1876 but had not, himself, followed through.

This time, so it appears, Freud was determined to carry the day. He published a brief sketch, (26) as histologists usually do, but in order to escape "the fate of other inventors" as he says and of his own first trial six years previously—as one may assume—he followed up this publication with the detailed seven-page presentation (25) which contains the lines quoted above. Not satisfied with this he writes a third version—this time in English—and published it in "Brain". (27) These efforts brought him some success. This invention was not completely overlooked. Some students, off and on, have used it and at least one of them, in one American journal, still remembered the method in 1888. (28) However, it was not the gold chloride preparation of

nerve tracts which became known as the Freudian method.

These two new methods and their fate would be of no importance were it not that they complete the picture of the young scientist Freud. It is a picture that has a striking likeness to that of the inventor of the psychoanalytic method. For Freud, as he has many times emphasized, psychoanalysis is first of all a new technique by which a whole realm of facts, inaccessible before, can be brought to light. It is a new instrument of observation, a new tool of research. In the second place only is it a body of new knowledge gained by the use of the new instrument. The Freudian discoveries are the almost incidental results of the Freudian invention. From his early scientific days on, his central aspiration was, so it appears, to do more than to collect and to marshall facts already known; more than to add a few units to the army against the dark and the unknown. He longed to provide it with a new type of weapon—an achievement which, with one magic stroke might multiply its fighting power.

Whether or not these metaphors which try to establish some continuity from Freud's early day dreams to his life work have any validity or are just a matter of style I do not know. Yet I want to stress emphatically that Freud's persistent interest in the invention of methods, though due to the individual trend of his mind, coincides with the basic ideas of the Brücke Institute and with the logical structure of science. Scientific progress runs from a new instrument to a new body of facts. The invention of the microscope, for instance, preceded histology. And in the history of any limited scientific field only new instruments and techniques can, in the long run, bring new facts. From there science proceeds to a new theory: the organization of the new and the old knowledge into one body of facts; and from the theory it finally runs to "speculation"—that is to the guessing at questions and answers beyond existing means of observation. It is very rare when one and the same man is productive in several of these phases, and almost never does it happen that he is equally effective in all. Psychoanalysis

is an example of this rarest case: Freud invented the instrument, used it for a great number of discoveries, provided the organizing theory and the speculation beyond the known. The remarkable fact is, that he had already reached out for such encyclopedic achievement in his twenties. Freud's lecture on "The Structure of the Elements of the Nervous System", (23) delivered at the Psychiatric Society in 1882, presents the new technique, the new findings due to it, the theory adequate to them and some glances beyond. Every Freudian essential is there—in nucleo—but already sharply defined.

IV. PHYSIOLOGY

Commenting on his professional education, Freud remarked that the physiology of his student years "was far too much concerned with histology". (1) This mild reproach stands out sharply against the background of the superlative praise with which Freud usually spoke of Brücke and his school. Moreover, among all the possible objections to Brücke's teaching this one is the least justified. True, in Brücke's Institute the microscopic and experimental approaches were still not separated in the seventies. Physiological experimentation, including the biophysics and biochemistry of today, became at that time increasingly the via regia, and some physiologists indulged in contempt of the microscopists. Not so Brücke. He continued to announce his classes in the lingo of the Vienna University as "Physiology and Higher Anatomy". To him the knowledge of the spatial organismic structure seemed as necessary as the knowledge of the forces playing on this apparatus, changing or reproducing it. The structure can be revealed by the microscope only. In Brücke's mind there was no opposition between anatomy and physiology; between microscope and experiment. This was the attitude which had already made famous his first major work in 1847. Yet in Freud's time the work done by Brücke and his assistants Fleischl and Exner was, in fact, almost completely physiological in the

narrow sense of the word, dealing with organismic function and using animal experiment as one, though not as the only method. There were few institutes in Europe where one could learn physiology equally well.

We have no indication that Freud made use of this opportunity. Considering the full freedom which existed in Brücke's Institute it is quite unlikely that any kind of external pressure kept him behind the microscope after he had finished his first histological assignment on the Reissner cell in 1878. In 1883, shortly after Freud left the Institute to prepare for medical practice, he again took up research. Yet even then—although undoubtedly free to choose topic and method—he returned to anatomical investigations. Only when clinical neurology took more and more of his increasingly fewer spare hours he discontinued all anatomical-histological research. His work in neurology Freud did not consider to be scientific research at all, in spite of its impressive quantity and the unanimous recognition which it found. Only in the middle nineties, when, as a cathartic psychoanalyst he again found himself behind an observation object, studying the structure of the mind, hoping for insight into the workings of the brain, did he feel that he had returned to science and enjoy this fact "as the triumph of his life". Thus it might be concluded that his heart simply was in histology, and that physiology did not appeal to him. However he stressed too frequently and too seriously the subordinate character of the study of forms, for the understanding of the function—guessing the drama from the stage setting, one might say. From the beginning of his scientific career, the knowledge of the acting forces certainly was a cherished goal, but for many years, like Moses, he stood before the forbidden promised-land with only a guess of what it might look like.

A fact not mentioned in Freud's autobiography and overlooked by his biographers puts this conflict into sharp relief. Freud did make several efforts in the field of physiology proper during his student years, but not in Brücke's

Institute. At that time a great deal of physiological research was done under the guidance of Stricker. Solomon Stricker, a contemporary of Claus (born 1834), trained by Brücke, had been Professor Ordinarius and chief of the Pathological Institute since 1873. (29) His early reputation was derived from embryological studies. His later work was concerned with the physiology of the vascular system and with the theory of consciousness, speech and thought. He is credited with transforming pathology from an anatomical into an experimental physiological discipline. In his institute a large amount of meritorious work was accomplished in various fields of physiology. His assistants were good men, but very few great talents developed in his school. His vanity, quarrelsomeness, righteousness and some personal and scientific eccentricities were at fault—so it was gossiped in Vienna at that time. Freud worked in this institute at least twice; once in 1878 and again in 1883 to 1884.

At the meeting of the Medical Society in Vienna on October 17, 1879 Stricker introduced his paper on *Azinous Glands* with the statement that his student Freud had, at his suggestion, conducted experiments on this topic for a period of half a year, but had accomplished nothing. After Freud's failure Stricker collaborated with Spina and obtained interesting results. (30) Allowing half a year for these new experiments, Freud's efforts must have started sometime in the second half of '78, at the latest.

Thus Freud had tried his hand in experimental physiology soon after he had completed the histology of the Reissner cells in Petromyzon. He failed. Immediately afterwards he returned, by his own choice, to Brücke's Physiological Institute. Here he did not take up physiology but he went back to the microscope and started work on the *Nerve Cells of the Crayfish,* using the live-tissue method of which Stricker and not Brücke was the protagonist in Vienna.

In 1883, after he had left Brücke, we find him again in Sticker's Institute. (31) There he participated, together with Wagner-Jauregg, Gaertner, Spina and Koller, in ani-

mal experiments as part of a research project on the function of glands and of the circulatory system. Again Freud accomplished nothing. Simultaneously he had started research in brain anatomy and worked on his second invention—the gold-chloride method. The resumption of physiological research, it seems, was only half hearted but it indicates that his urge to go into physiology proper was still alive. Unlike Moses, he tried to penetrate the promised land but was forced back on every attempt. Not the lack of facilities, of opportunities, of teachers or of stimulation frustrated him. And certainly there was no lack of interest. Instead the ability for physiological work was missing. This can be said on the negative evidence that no physiological achievements of his are extant. There is even one positive clue: Freud has published, in 1885, a single piece of experimental work—the effect of cocaine, measured by the dynamometer. (32) It is a very poor effort indeed. In concept and technique it is oversimplified, uncertain and uncritical—the work of a beginner with little promise; quite different from the qualities of his initial histological work. Not, as he said, zoology, but physiology was really the field in which "the peculiarities and limitations of his gifts denied him all success".

Thanks to Freud, such "gifts" are no longer the last entities to psychological understanding. Beyond them exist determinants of "peculiarities and limitations". As in the case of Freud's alleged failure in zoology we might guess at one or the other reason for his suppressed failure in physiology. Stricker was, even less than Claus, a teacher whom Freud "could respect". One can see very well why he had not succeeded with Stricker. But why had he not grasped the opportunities at the Brücke Institute? Why had he accepted Brücke as authority and model only in the investigation of the setting and not of the drama? Brücke had started him on the dissection of the dead body. Had Freud unconsciously taken this advice to mean that Brücke had exiled him to the preliminary lowlier study of the structure and had reserved for himself and the older members of

the Institute the higher wisdom about the workings of the living organism? Had he thus reaffirmed Freud's father's angry scolding of the child "when he, driven by early sexual curiosity, had intruded into the parental bedroom"? (15) And had he therefore tabooed physiology? Perhaps.

One feels on safe ground in pointing to a more superficial but probably concommitant factor. The animal experiment is a far more brutal exercise of power over the rights and life of the creature than the investigation of the corpse. And life cells of the crayfish?—but are they not "dead" compared with living guinea pigs, rabbits and dogs? As an adolescent Freud retreated from the power over man into the science of nature. The same basic design will reappear when Freud in his middle-thirties gives up hypnosis in search for "a less coarsely interfering" method. These were the two turning points in Freud's relation to science; at the first he became a scientist; at the second, he invented psychoanalysis. And in between these two marks he stayed away from experimental physiological activity or, after brief excursions, returned to the more subtle exercise of power, to the role of observer of mere structure.

V. TRANSLATIONS.

To Freud's university years belongs the only work ever published by him which has no connection with his scientific or therapeutic interests. In 1879 Freud did a German translation of some essays of John Stuart Mill. The editor of Mill's collected writings in German was Theodore Gomperz, a philosopher and historian of high standing in the university and in the society of Vienna. Freud substituted for Eduard Wessel, the young translator who had died suddenly during the preparation of the twelfth volume. He started the work in the fall of 1879 and completed it in December of that year.

Why Freud accepted this commission is not known. He was at that time on involuntary leave from science, serving his one-year term in the army, which was compulsory for

all physically able students. He was no model soldier it seems; he recalls gleefully how he spent his twenty-first birthday, May 6, 1880, under arrest. I can imagine that he seized the opportunity to kill the boredom of the barracks and to forget the discomforts of garrison life, by mental exertion—a kind of relaxation which has a touch of bravado indeed, considering the physical, psychological and moral strain of the service. Furthermore, even a modest translator's fee must have been quite welcome, in this year es-pecially.

However, the task may have interested Freud beyond such secondary motivations. When Freud decided to take his place among the scientists and not with the politicians he had by no means abandoned interest in, and curiosity for social questions. Three of the four essays by Mill which he translated deal with the labor question, the enfranchisement of women and socialism. Freud, in his later years, heartily abhorred philosophy and it is not likely that he ever had much interest in it. But Mill's philosophical work is in distinct contrast to the metaphysical systems which were specifically called "philosophy". Mill's work was very close to the empirical physicalistic spirit of the Brücke Institute. It is quite possible that Freud was attracted by the topics of the essays and by the writer as well. And it is certain that he liked to translate. Freud loved languages and writing. He read Greek and Latin for pleasure in his high school years. He had an early command of English and French and later wrote several papers in these languages. He did a considerable amount of translating during his life—two volumes of Bernheim and two of Charcot, though on these occasions, even more than with Mill, secondary determinations existed. Freud as a translator was so careful, so brilliant and so rapid that translating, as such, must have appealed to him as a challenging pastime.

When Theodore Gomperz' son Heinrich, himself a philosopher and historian, prepared the biography of his father he asked Freud how he became the translator of the twelfth volume. Freud replied, in a letter dated June 9, 1932 (in

translation): "I know that I was recommended to your father by Franz Brentano. Your father at a party . . . mentioned that he was looking for a translator and Brentano, whose student I then was or had been at a still earlier time, named my name". (34) That he had personally known Brentano; that he once had been his student and was well remembered by him, seems strange. Franz Brentano has not published much, and his teaching in philosophy and psychology did not create a great stir during his lifetime. (35) But Husserl's phenomenology and the various shades of logic and psychology ("Gegenstands-theorie") of Meinong, Marty and others, trace their origins to him. Several newer trends in psychology like the schools of Stumpf and more recently that of the Gestalt psychology, acknowledged him as one of their distinguished forerunners. In fact he had, in 1870, turned from metaphysics and physiological physicalism alike and developed phychology as a science based on empirical observation of the consciously "given". One is inclined to think of Brentano and Freud as almost diametrical opposites.

Heinrich Gomperz comments on the relation between Freud and Brentano which he feels is "not quite insignificant: We ought to remember that Freud had always opposed the more or less materialistic medicine of his time, stressing the relative independence of the 'psychic apparatus' from the physical, and in this connection maintained that it is possible to influence psychical maladies psychically. May we speak, perhaps, of a certain after-effect of the influence of a psychologist, who, more than any other, distinguished between 'physical' and 'psychic' phenomena and erected his whole doctrine on the basis of this distinction?"

That Gomperz misinterprets Freud's position follows clearly, if there were any doubt, from the preceding chapters of the present paper.

It is impossible that Freud at that time, or at any time for that matter, was a follower of Brentano. One even wonders whether he would have cared to understand the finer points of his arguments. This does not exclude the possibility that

Freud was impressed by some of Brentano's polemics and statements, that he preserved them in his preconscious and that they influenced his thoughts twenty years later when he, disappointed in the existing psychological theories, ventured into this broad field on his own. Brentano's classification of the mental phenomena (perception, judgment and love-hate); his ideas concerning genius; his determinism, and—in some complex way—his emphasis on the fact that all psychological phenomena refer to an object (intentionalism)—to put it crudely—all these thoughts could have had a belated influence on Freud in the nineties. So could have, as T. H. Merlan points out, Brentano's thorough historical presentation and most serious consideration of the doctrine "of the unconscious" in spite of Brentano's rejection of the concept of unconscious psychic activity. All these could have—if Freud had ever been a student of Brentano. In his letter to Gomperz Freud states that he had been a "Hoerer" of Brentano which means that he had "attended his lectures"; literally that he was one of Brentano's "listeners" rather than one of his pupils. Brentano was a very famous personality in the academic Vienna of his time and his lectures were crowded not only by students but by visitors and academic notables as well. Yet very few of his "Hoerer" came to study his phiosophy and psychology.

Brentano held the attention of all Vienna from the moment he arrived from Würzburg as a professor of philosophy in 1874. His very name made him interesting. A nephew of the famous romantic poet Clemence Brentano, a grandson of Sophie La Roche, the friend of Goethe's youth, a nephew of Bettina, the famous addressee of Goethe's "Correspondence with a Child,"—he was welcomed in the literary circles and salons. But more exciting than the history of his family was his own. A doctor of philosophy at the age of twenty-four, he decided to study theology and was ordained two years later as a Catholic priest. At thirty-two he courageously led the fight against the Pope's intention to set up the dogma of infallibility. Failing in his efforts, he

defrocked himself and resigned his professorship in Würzburg. The Viennese liberal scientists acclaimed his appointment and soon found out that his personality, in sincerity, courage and charm, matched his pedigree and his spectacular action. Just at the time when Gomperz was looking for a traslator, Brentano offered Vienna another exciting spectacle. He wanted to marry Ida Lieben, "one of the most noble daughters of Vienna," but the reactionary interpretation of an old Austrian law made such a marriage illegal for a former priest. Brentano resigned his position, acquired Saxon citizenship and finally married in Leipzig on September 16, 1880. He returned to Vienna to resume his lectures at the university—this time a simple lecturer (Privat-dozent).

That Freud was interested in Brentano and respected him as a man and a fighter there can be no doubt. Yet I have no clue to the understanding of Brentano's interest in Freud. However, the recommendation of a young student as a translator for some rather unphilosophical essays by Mill does not necessarily indicate a high esteem for him. The assignment certainly did not require adherence to Brentano's teachings. It was more important to find someone who knew English. That Freud excelled in Brentano's seminar with his linguistic knowledge is possible. But it is equally possible that Brentano might not have been impressed by Freud at all—might hardly have remembered him personally—but was following the suggestion of one of their mutual friends. Fleischl, Exner, and Freud's close friend, Paneth, were personally and through their families, well acquainted with Brentano; Joseph Breuer was his family physician. At any rate, since we do not know how close Freud's acquaintance with Breuer and Paneth was in 1879, the reconstruction presented is hypothetical.

> Horace Gray, in his list of Freud's 65 pre-analytic writings, makes a subjective comment on only one, the Stuart Mill translation. "In a footnote to the German version the editor Gomperz tells us (1) that the author inserted in the reprint of the essay

a short preface, in which he explains that by far the greatest part of it is the work of his wife, since dead in 1858, highly valued by him for her preeminent qualities of mind and character; and (2) that he publishes no translation of Mill's later related work The Subjection of Women, 1869, which had been translated as Die Hoerigkeit der Frauen. The above facts are interesting in connection with Freud's later comment: 'That hostile embitterment displayed by women against men, never entirely absent in the relation between the sexes, the clearest indications of which are to be found in the writings and ambitions of emancipated women'.—In passing we note the high quality of the German translation of the Enfranchisement in its close adherence to the original without sacrificing smoothness. A curious point is the spelling of the translator's name as Siegmund, both on the title page and in the editor's epilogue." (4)

The influence of English philosophy, literature and political thought on Freud is an interesting topic which deserves a separate study. As every one who mentions Freud's translation feels provoked to comment on it I also want to make a remark. In a conversation about Plato Freud admitted in 1933, that his knowledge of Plato's philosophy was very fragmentary but that he had been greatly impressed by his theory of anamnesis and that he had, at one time, given it a great deal of thought (36). Amongst the essays in the twelfth volume, Stuart Mill's paper on "Grote's Plato" takes a conspicuous place. Mills presentation treats the theory of reminiscence with sympathy and in general is a forceful debunking of the views on Plato's philosophy which high school teachers were accustomed to preach at that time. Mill's common sense must have appealed to Freud very much and this essay could well be the main source of Freud's "fragmentary knowledge".

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A SHORT NOTE ON EMPEDOCLES AND FREUD

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There are references in Freud's late writings to the pre-Socratic Greek philosopher Empedocles. Freud indicated that Empedocles had, in essence, priority in the formulation of the dual-instinct theory. The purpose of this note is to present under one heading Freud's remarks concerning Empedocles, and the translation, from the original surviving fragments, of those of Empedocles' verses which pertain to this subject.

Freud presented his fullest discussion of Empedocles in a section of "Analysis Terminable and Interminable", which is quoted at length below:

"I am well aware that the dualistic theory according to which an instinct of death, destruction or aggression claims equal partnership with Eros as manifested in libido, has met with little general acceptance and has not really established itself even among psychoanalysts. My delight was proportionately great when I discovered that our theory was held by one of the great thinkers of ancient Greece. So glad am I of this confirmation that I willingly sacrifice the prestige of originality, especially as I read so widely in earlier years that I can never be quite certain that what I thought was the creation of my own mind may not really have been an outcome of cryptoamnesia.

"Empedocles of Akragas, born about 495 B.C., was one of the grandest and most remarkable figures in the history of Greek civilization. . . Born at a time when the realm of science was not yet divided into so many provinces, he held some theories which inevitably strike us as primitive. He explained the variety of things by the fusion of four elements—earth, water, fire and air, and he held that all nature

was animate, and he believed in the transmigration of souls. . . .

"The theory of Empedocles which specifically claims our attention is that which approximates so closely to the psychoanalytical theory of instinct that we should be tempted to maintain that the two are identical were it not for this difference: the Greek's theory is a cosmic fantasy, while our own confines itself to its biological applications. At the same time, the fact that Empedocles ascribed to the universe the same principle of animation as is manifested in each living creature makes this difference considerably less important.

"The Greek philosopher taught that there were two principles of natural process in the life of the universe, as in that of the mind, and that these principles were eternally in conflict with one another. He called them Love and Strife. The one of these powers, which he really conceived of as natural forces working as instincts, and certainly not as intelligences with a conscious aim, strives to unite the atoms of the elements. Empedocles conceives of the world-process as a continuous, never-ceasing alternation of periods in which the one or the other of the two fundamental forces triumphs, so that Love, and at another time, Strife, fulfills its purpose and governs the universe, after which the other vanquished power asserts itself and prevails.

"The two fundamental principles of Empedocles are, both in name and in function, the same as our two primal instincts, Eros and Destruction, the former of which strives to comprehend existing phenomena in ever-greater unities, while the latter seeks to dissolve these combinations and destroy the forms to which they have given rise. But we shall not be surprised to find that this theory has changed in certain respects on its re-emergence after two and one-half thousand years. Apart from the limitations imposed upon us by the biophysical standpoint, we no longer take as our fundamental elements the four elements of Empedocles; animate matter is now sharply differentiated from inanimate, and we no longer think of the mingling and separation of particles

of matter, but of the fusion and defusion of instinct components. Moreover, we now have a certain biological basis for the principle of strife, since we trace the instinct of destruction to the death instinct, the urge of animate matter to return to the inanimate state. We are of course not asserting that this instinct first arose with the dawning of life or denying that it existed before. And nobody can foresee in what guise the nucleus of truth contained in the theory of Empedocles will present itself to the vision of a later day."

And now let us turn to Empedocles himself. The following passages are taken directly from the Hermann Diels translation of the surviving verses which appear in Burnet's "Early Greek Philosophy".

Verse 17

I shall tell thee a two-fold tale. At one time it grew to be one only out of many; at another, it divided up to be many instead of one. There is a double becoming of perishable things, and a double passing away. The coming together of all things brings one generation into being and destroys it; the other grows up and is scattered as things become divided. And these things never cease continually changing places, at one time all uniting in one through Love, at another each borne in different directions by the repulsion of Strife. Thus as far as it is their nature to grow into one out of many, and to become many once more when the one is parted asunder, so far they come into being and their life abides not. But inasmuch as they never cease changing their places continually, so far they are immovable as they go around the circle of existence. At one time it grew together to be one only out of many, at another it parted asunder so as to be many instead of one. Fire and water and earth and the mighty height of air, dread Strife, too, apart from these of equal weight to each, and Love in their midst equal in length and breadth. Her do thou contemplate with thy mind, nor sit with dazed eyes: it is she that is known as being implanted in the frame of mortals. It is she that makes them have

thoughts of love and work the works of peace. They call her by the names of Joy and Aphrodite. Her has no mortal yet marked moving around among them, but do thou attend to the undeceitful ordering of my discourse.

For all these are equal and alike in age. Yet each has a different prerogative and its own peculiar nature, but they gain the upper hand in turn when the time comes around. And nothing comes into being besides these, nor do they pass away.

Verse 20

This (the contest of Love and Strife) is manifest in the mass of mortal limbs. At one time all the limbs that are the body's portion, are brought together by Love in blooming life's high season; at another, severed by cruel Strife, they wander each alone by the breakers of life's sea. It is the same with plants and the fish that make their home in the waters, with the beasts that have their lairs on the hills and the sea birds that sail on wings.

Verse 21

Come now, look at the things that bear witness to my earlier discourse, if so be that there was any shortcoming as to their form in the earlier list. Behold the sun, everywhere bright and warm, and all the immortal things that are bathed in heat and bright radiance. Behold the rain, everywhere dark and cold, and from the earth issue forth things close-pressed and solid. When they are in strife, all these are different in form and separated; but they come together in love and are desired by one another.

For out of these have sprung all things that were and are and shall be—trees and men and women, beasts and birds and the fishes that dwell in the waters, yea, and the gods that live long lives and are exalted in honor.

For there are these alone; but running through one another, they take different shapes—so much does mixture change them.

Verse 22

For all of these—sun, earth, sky and sea—are at one with all their parts that cast far and wide from them in mortal things. And even so all things are adapted for mixture, are like one to another and united in love by Aphrodite. Those things that differ most in origin, mixture and the forms imprinted on each are most hostile, being unaccustomed to unite and very sorry by the bidding of Strife, since it hath wrought their birth. For they prevail in turn as the circle comes round, and pass into one another, and grow great in their appointed turn.

Verse 26

There are these alone, but, running through one another, they become men and the tribes of beasts. At one time they are all brought together in one order by Love, at another they are carried each in different directions by the repulsion of Strife, 'til they grow once more into one and are wholly subdued. Thus, insofar as they are wont to grow into one out of many, and again divided become more than one, so far they come into being and their life is not lasting; but insofar as they never cease changing continually, so far are they evermore, immovable in the circle.

Verses 35-36

But I shall retrace my steps over the paths of song that I have travelled before, drawing from my saying a new saying. When Strife was fallen to the lowest depths of the vortex, and Love had reached to the center of the world, in it do all things come together so as to be one only, not all at once, but coming together at their will each from different quarters, and as they mingled, Strife began to pass out to the furthest limit. Yet many things remained unmixed, alternating with the things that were being mixed, namely that Strife not fallen yet retained; for it had not yet altogether retired perfectly from them to the outermost boundaries of the circle. Some of it still remained within, and some passed out from the limbs of the all. But in proportion as it kept rushing

out, a soft, immortal stream of blameless Love kept running in, and straightaway those things became mortal which had been immortal before, those things were mixed that had been unmixed, each changing its path. And, as they mingled, countless tribes of mortal creatures were scattered abroad, endowed with all manner of forms, a wonder to behold.

In these verses, Empedocles apparently states that the universe consists of ever-changing combinations of fire, water, earth and air. These basic elements are compelled to unite under the sway of Love and to be dispersed by Strife. He goes on to say that the forces of Love and Strife which are at work in inanimate nature reside and function similarly in man, lower animals, and plants. Not only are they created out of the conflict between these opposites, but their behavior is governed by them as well. The forces are conceived to have dimensions in the physical sense, that is, substance. The universe undergoes a repetitive cyclic change which consists of four periods—

1. A stage in which Love reigns supreme—the elements are commingled, quiescent, and form a sphere.
2. Strife becomes active and the contest begins — the elements are forced to disperse in spite of the resistance of Love.
3. Strife rules — the elements are completely dispersed.
4. Love reasserts itself and initiates a second struggle with Strife in which it is victorious and leads back to stage 1.

It would seem that the ancients anticipated modern scientific theory in at least two different respects. One is a genuine anticipation—a real element in the groundwork of a science. Examples are Archimedes' early ideas of the calculus, Euclidian geometry, Aristarchus' heliocentric theory of the solar system, etc.; these contributions are still valid, and possess not only accurate descriptive value, but predictability as well.

The other kind of anticipation consists of a purely formal, conceptual similarity between the old and the new. Certain words and concepts used in ancient theory are often found in modern theory. An example is the atomic theory of Democritus and Leucippus—remarkable for its many features in common with recent ideas. Yet, the form in which it is stated is such that the theory is non-verifiable, it offers no reliable predictability with respect to the phenomena it describes, and at best is one of a series of *possible* explanations of events which enable us to give an account of them only *after* they have occurred.

To this author it seems that Empedocles' theory belongs to this latter class and that Freud was overly modest in attributing to him ideas directly anticipatory to his own.

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DID FREUD REALLY ADVOCATE A "HANDS-OFF" POLICY TOWARD ARTISTIC CREATIVITY?

by

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Every student of Freud's writings is familiar with statements like the following: "Psychoanalysis can do nothing toward elucidating the nature of the artistic gift, nor can it explain the means by which the artist works"; "Whence comes the artist's ability to create is not the question of psychology." The most stringent statement on this topic is contained in Freud's essay on Dostoievski, published in 1928: "Unfortunately, psychoanalysis must lay down its arms before the problem of the artist." That statement is quoted with glee by poetry and literary magazines; it seems to them proof positive that psychoanalysis has "no business" to interfere with the artist's God-given mysterious powers.

In a previous paper, published in this journal, I pointed out the rather amazing fact that Freud's last statement on artistic productivity, published two years *after* his utterance in the Dostoievski study, is constantly and gratuitously overlooked. In *Civilization and Its Discontents,* published in 1930, we read:

> Another technique of fighting mental pain uses shifts of libido which our psychic apparatus permits, and which renders its functions so much more elastic. The problem to be solved, consists in shifting aims of drives in such a way that these cannot be hit by the outerworld. The sublimation of drives lends its help in that endeavor. One achieves the most if one is capable of sufficiently increasing the pleasure stemming from psychic and intellectual work. In this case, Fate can harm that person but little. Contentment of that type, like *the pleasure of the artist in creation,* in the personification of his phantasies, or that of the scientist in the solution of problems and

> finding of the truth, *carry with them a specific quality which—one day—we shall surely be capable of characterizing metapsychologically.* (1)

This statement seems to me indicative that nine years before his death Freud relinquished his pessimism (at least temporarily) as to the role psychoanalysis can play in the elucidation of artistic creativity. For those who question this conclusion, another even more decisive argument can be adduced. We know that Freud believed firmly in scientific progress and hence an a priori denial of future scientific findings cannot be rightly attributed to him.

Personally, I believe that the mystery of artistic creativity can today be "characterized metapsychologically." There is no point in repeating the results of a long series of clinical studies leading to the assumption of an oral-masochistic substructure in writers and the resulting complicated systems of inner defenses presented to the inner conscience, written by myself on the basis of intensive and extensive "couch-acquaintanceship" with 36 writers during a period of twenty years. (2)

Still the fact remains that Freud reiterated between 1908 (the time of publication of his study "The Poet and His Relation to Day-dreaming") and 1928 (study on Dostoievski) the incompetence of analysis to explain artistic creativity. On the other hand, we find in Freud's writings a great many studies on poets and their work (Shakespeare, Jensen, Ibsen, Goethe, Schnitzler, Zweig, E. T. A. Howmann, etc.). One must admit that the psychology of works of art had some magic attraction for Freud—and still, he stated that his own science had to "lay down its arms before the problem of the artist." How are we to explain this contradiction?

It has become fashionable to contribute data toward the "explanation" of Freud in psychologic terms. Bernfeld attempted to discover the real Freud behind a Freudian case history. Reik in his latest book quoted a personal remark of Freud hinting at his early period of street fear. Thus the impression could be created that Freud focused his in-

terest on neuroses exclusively because of highly personal reasons. The implied deductions (*not* drawn by either of these authors) seem too simple: the combination of psychological genius plus slight agoraphobia (overcome, to boot) does not spel discovery of a new science. The whole speculation (it should be stressed again that neither Reik nor Bernfeld did draw these conclusion, though future naive journalists writing "biographies" of Freud may do so) seems futile to me. I do not believe that a serious student of Freud should or could write an "explanation" of Freud's psychological make-up. What is permissible, however, is to point out contradictions in some of Freud's viewpoints, suggesting that personal problems were involved, without trying to "explain" Freud.

I believe that Freud's stress on the artist's inaccessibility is a case in point. In none of his 6000 printed pages is the clinical analysis of even *one* writer actually analyzed by Freud mentioned. Why this reticence, or lack (avoidance?) of clinical material, and why the superabundance of speculative deductions pertaining to dead writers?

It seems to me that an interesting statement of Freud—made in a completely different connection—is relevant: namely, that the future creator of psychoanalysis decided to study medicine after hearing a recital of Goethe's *Fragment upon Nature.*

Interestingly enough, only one analyst has so far investigated the meaning of the *Fragment* in connection with Freud. Dr. Fritz Wittels, in his interesting and valuable book *Freud and his Time* (Liveright 1931), explains the impact of the *Fragment* on Freud by reference to Freud's father-respect for Goethe and attachment to beauty, hence to *mother.* Wittels' first chapter "Goethe and Freud" is one of the best our distinguished colleague has written.

One point, however, mars full acceptance: Goethe's description of Nature as Mother does not correspond to the *oedipal* mother at all. It is a peculiar image of a fully autocratic, fully narcissistic, sometimes condescending, potentially

always cruel "person." Here are a few excerpts:

> She (Nature) dwells in none but children; and the *mother,* where is she? . . . We are continuously at work upon her, yet have *no power over her. . . She loves herself.* . . She delights in illusion. Whoever destroys this in himself or others, him she *punishes like the harshest tyrant.* . . She casts forth her creatures out of the void and tells them nothing as to where they come from and whither they go. *They are only to run, the way she alone knows.* . . She is *rough and* gentle, lovely and *terror inspiring* .("Schrecklich"), weak and *all-powerful.* . . One . . . wrings from her *no gift which she does not bestow voluntarily.* . . She creates abysses between all beings and everything will swallow itself up. . . *I commit myself to her.* . .

This is a far cry from the "passive", "submissive", "castrated", oedipal mother. Goethe's imaginary mother nature corresponds more to the modified *pre-oedipal* mother who is also—via projection of the child's own aggression—the personification of "Schrecklichkeit."

On the other hand, Goethe's description contains also a series of hints pertaining to the oedipal mother, though described in a rather condescending variant:

> *Her crown is love.* Only through it does one draw near her. . . We are surrounded by her, *embraced by her*—impossible to release ourselves from her and *impossible to enter more deeply into her.* . . She is . . . always with some *soft covering* spread over her. . . She plays a friendly game with all. . .

Summarizing, one can state that Goethe's description is that of the pre-oedipal mother with some oedipal sugar coatings.

Freud discovered the Oedipus Complex, and the dynamics of that astounding fact, as far as Freud himself is concerned, have never been clarified. In my essay on Stendhal, (3) I showed that that writer discovered his individual Oedipus two generations before Freud as unconscious defense against deeper repressed passive feminine attachment to the father, covering in turn still deeper repressed oral tenden-

cies. In my book *The Battle of the Conscience* (1948) I expressed the opinion that Sophocles' discovery of the Oedipus Complex had a similar defensive core: the Greek culture of the intelligentsia being at that time a homosexual one (and homosexuality being an oral neurosis, (4) the poet could as "admission to the lesser crime" become conscious of the universality of the Oedipus attachment.

Hence, in my opinion, great discoveries are performed according to the principle of inner defense. Add to this the fact, discovered by Freud himself, (though only in 1931 at the age of 75!) that the Oedipus complex does not come into being as deus ex machina, but is built on the *pre*-oedipal mother attachment, and the question presents itself: Was it not exactly the *dichotomy of mothers* (so clearly expressed in Goethe's *Fragment*) *which lent itself to the unconscious purpose of asserting the domination over the oedipal mother to ward off the "Schrecklichkeit" of the pre-oedipal mother?*

In my book *The Basic Neurosis* (5), I attempted to prove that every neurosis is built on undigested masochistic attachment to the pre-oedipal mother; the higher developmental levels are but "rescue stations" from this deepest mortal danger: oral regression and psychic masochism.

What has all this to do with the problem whether Freud *really* advocated a "hands-off" policy towards artistic creativity? A good deal. I suspect that unconsciously Freud had emotional difficulties in clarifying for himself the dichotomy of mothers (6), as stated in Goethe's *Fragment.* This was *intrapsychically shifted to a denial of the possibility of understanding artistic creativity in poets in general.* That effevtive motive was—as is possible for a scientific genius—interrupted around 1930 in the passage quoted from *Civilization and its Discontents,* and one year later in his basic paper "On Female Sevuality" in which he built in the pre-oedipal phase of the psychic history.

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NOTES

(1) Ges. Schr. XII. p. 45-46. Italics are mine.
(2) Summary in my book *The Writer and Psychoanalysis* (In print).
(3) *Talleyrand-Napoleon-Stendhal-Grabbe,* Int. Psychoan. Verlag, 1935.
(4) See my studies on male homosexuality, e. g. "The Myth of a New National Disease—Homosexuality and the Kinsey Report," *The Psychiatric Quarterly,* 22: 66-88, 1948.
(5) Grune and Stratton, New York, 1949.
(6) This would also explain why Freud had so little to say about the oral regression, seemingly shying away from its masochistic substructure. See, for instance, his famous statement in *Leonardo Da Vinci* (1910): "We will *for the moment* leave aside the question as to what connection there is between homosexuality and sucking at the mother's breast." The "moment" never came. See also Freud's statements in connection with Stärcke's interpretation of a masochistic dream (Primäraffect' (primary lesson on syphilis) "prima affectio", vide Ges. Schr. III, p. 30): "Another motive of 'opposite wish dreams' lays so near that one easily falls into the trap of overlooking it, *as has happened to myself over a long period of time . . . the masochistic component.*" (Italics are mine.)

A BIOGRAPHICAL COMMENT ON FREUD'S DUAL INSTINCT THEORY*

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"Si vis vitam para mortem." Freud (7)

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The approaching tenth anniversary of Freud's death on September 23, 1939 brings to mind certain aspects of his later life which may permit a new step in the evaluation of the dual instinct theory, his late contribution to the psychological problem of death.

In his *The Interpretation of Dreams* (5), published in 1900, Freud reveals to us that the death of his father brought to his increased awareness the ambivalent nature of his relationship to the father. It was only after the father's death that he developed the theoretical formulations known as the Oedipus complex.

It is because of similar problems that after the death of Freud his pupils and followers gave more and more public and printed expression of their intensive preoccupation with the life and death of the founder of Psychoanalysis. It seems as if the death of Freud permits us now to learn more about him, his life and consequently perhaps also about Psychoanalysis.

Our own ambivalence, another example of the Oedipal theme, is converted into scientific curiosity that aims at better insight into and integration of the work he left for us.

The present author is interested in throwing some light on certain biographical aspects of Freud's *Beyond the Pleasure Principle* (4) which might lead to a fuller appreciation of certain personal problems of Freud that have been a contributing cause for the formulation of the dual instinct theory, that is: the introduction of the death instinct theory.

Beyond the Pleasure Principle was published in 1920 (while its English translation by Ernest Jones appeared in 1922).

There is no doubt that his dissatisfaction with the libido theory, new puzzling therapeutic experiences during and after the First World War, difficulties in understanding the compulsion to repeat painful experiences led to the introduction of the death instinct theory. (4)

Freud himself mentions his awareness that the new theory is not very popular with the analysts. Even in Karl A. Menninger's *Man Against Himself* (10), an excellent and comprehensive presentation of the destructive tendencies in man, no theoretical evaluation is made as to the nature of the death instinct. One is under the impression that Menninger believes in the death instinct theory as a tentative heuristic principle but not as a truly tenable and clarified theoretical concept. Others such as H. S. Sullivan, who states that he "has found no comfort in the doctrine of the death instinct, cannot accept as inborn any patterns of self-destructive behavior", are however in the majority.

The following observations have no bearing on the truth or falsity of the theory itself but are presented in order to discuss certain personal, psychological aspects that may have contributed to the change in Freud's metapsychology.

Freud was 64 years of age at the time of the publication of *Beyond the Pleasure Principle* and one may be right in assuming that he was not a very well man. Three years later he had his first operation for cancer of the jaw. Hitschmann, in his article on "Freud in Life and Death" (8) writes that "Freud died from a neoplasm of the mouth, which began as an 'epulis' on the basis of a leukoplakia oris caused by intensive smoking" (p. 130). It is also Hitschmann who calls to our attention Freud's dream which the master analyses in the *"Ergaenzungen zur Traumdeutung"* (6) and which falls into the period between 1915 and 1918. Freud uses the dream to illustrate the primitive wish of the Ego reacting against repressed impulse-material. Freud's investigations led him

to an early memory*, when as a little boy he stepped upon

*See also Bernfeld (1,2)

a footstool to fetch something appetizing. The footstool tilted over and hit the child behind his lower jaw. The "punishment" dream for oral cravings expresses the power of the superego. Freud followed all through life his strong oral impulses. In fact, many of his outstanding character traits, as is well documented in Puner's *Freud: His Life and Mind* (11) are typical for the oral character. Freud was an inveterate smoker all through his life even though doctors had repeatedly warned him against it. Freud's oral cravings, the guilt connected with them, the beginning stages of the fatal illness, his feelings about aging, found their projective expressions in the theory that described the eternal struggle between Thanatos and Eros.

There is another suggestion which, if correct, may strengthen these assumptions. The reader will recall that Freud reports in *Beyond the Pleasure Principle* (4) about his observations of the play activities of a one-and-a-half year old boy. The unconscious meaning of the child's play, according to Freud is the preoccupation with the first great cultural accomplishment, that is, the ability to tolerate his mother's departure and return. The game is an effort to control the leaving and coming of the mother as if the child himself were the one who decides on it. Later on, the child changes the game and it is now he who disappears and comes back, and thus masters actively in his play what *he* suffered passively a few months earlier.

Freud mentions that the mother died when the youngster was 5½ years of age. He also mentions that he had occasion to watch the small child since he lived with the family for a while.

One is impressed that the careful clinician Freud makes
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this small observation almost into the empirical basis of a

new theoretical formulation. One may wonder why such a small event made such a powerful impression on the originator of Psychoanalysis.

The puzzle seems to find a solution if we assume that the little boy Freud mentions was really his grandchild, Ernst Halberstadt. Ernst's mother, Sophie was Freud's beloved second daughter whose death occurred shortly before Freud formulated the second instinct theory (as is also mentioned by Puner [11]). In a personal communication Bernfeld (3) reminds the author that Wittels in his book *Sigmund Freud* had advanced the suggestion that the death of Sophie determined Freud's introduction of the death instinct theory. In his reply Freud qualifies this conjecture as interesting but not valid since the main items of *Beyond the Pleasure Principle* were written before Sophie's death.

Bernfeld (3) also called to the attention of this author that Ernst had a younger brother who died very early. We have no source at present which would permit us to decide if either of the two grandchildren is identical with the little boy in Freud's volume.

The present author feels that the facts of chronology speak in favor of Ernst as the child of the literature if his conjecture is correct.

In observing and understanding the small boy, his grandchild, he also tried to understand himself, and the psychological problem in facing the unavoidable "going away forever".

If the identity of the little boy, who indirectly has so much contributed to the psychology of play, is pointed out by us correctly, we could read new meaning into the following statement out of Freud's *Beyond the Pleasure Principle*(4), " . . . . that everything living must die out of inner causes. . . We are used to think that way and our poets strengthen us in it. Perhaps we have decided to do so because there seems comfort in this faith. *If one has to die oneself and if one has to lose at first one's beloved ones through death,* then one would rather want to submit to an

inexorable law of nature than chance. . . But perhaps the faith in the inner lawfulness of death is just one of the illusions which we have created in order to stand the difficulty of existence, of living."

Freud's dictum of "the soft but persistent voice of the intellect" was his strong defense in standing up under the strain of the First World War, which was considered senseless by the cultural world of 1914, the untimely death of Sophie, the fate of the motherless grandchild, his own age, illness, and awareness of destructive impulses.

It is Hitschmann again in his article on *The History of the Aggression Impulse* (9) who calls to our attention that Freud's early follower, Alfred Adler, described in 1908 the "aggression impulse" but Freud then denied it as a "misleading generalization". In 1920 he introduced the death instinct and admitted at the age of 74 that he had erred.

The most powerful source of psychological discovery then seems to be awareness of inner struggle, inner conflict, mastery of one's own destiny. It is this constant struggle for inner mastery, this eternal "solution" of inner conflicts which gave Freud the strength and the conviction to carry on in spite of the loss of those he loved, against fatal illness and its pain and the infirmities of age. He who created the death instinct was sufficiently optimistic to fight ceaselessly until the end. He dared to face Thanatos because he believed in Eros. He suggested: "If you want to endure life be prepared for death." (7)

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FREUD AND LITERARY THEORY

by Arthur Wormhoudt, Ph.D

It is a well known fact that writers and critics have had a particular interest in the theories of Freud since the time of his earliest fame. If one can estimate the influence of ideas on groups of men at all, it is perhaps fair to say that neither the theories of Darwin nor Marx are so apparent in the literature of their contemporaries and successors as those of Freud are in our literature. It is of course true that not all contemporary writers have been favorably disposed toward Freudian psychology, but all have, consciously or unconsciously, taken cognizance of it. In the 19th century it was the church which was most perplexed by the new theories of Darwin, and we know now that many of the fears aroused by the controversy were groundless. It is perhaps a faulty analogy to parallel these earlier ideological struggles with the attempt on the part of contemporary artists to cope with Freud, yet it is true that writers and literary critics have been responsible for much of the popularization of Freudian theory. It is not surprising that in this process many misunderstandings arose as to what Freud's views actually were. Psychoanalysis was from the start a highly complicated psychology. As it developed over a period of fifty years it became even more complicated. But while no one can be condemned for failing to grasp a difficult subject matter, it is often enlightening to see where those failures lie and what their causes are.

Perhaps the most widespread of these misunderstandings is the belief that psychoanalysis was primarily concerned with sexual motivations. In its crudest form this belief gave new impetus to the traditional unconventionality of the artist and seemed to encourage him to throw off the inhibitions on his sexual impulses both in his personal life and in his artistic work. This was, however, only a passing phase for it was

soon discovered that Freud stood not at all for sexual license, which is a symptom of mental illness, but rather for a normal, healthy attitude toward sexuality. Nevertheless the view that psychoanalysis and its application to literature was solely concerned with sex has persisted. It is true that Freud's early researches laid great stress on the importance of sexual tendencies in the psyche. But as his work progressed he found that aggressive tendencies claimed an equally important share of his attention. But the literary critics and writers who were interested in psychoanalysis did not keep abreast of this fundamental change in theory. Instead they continued to discuss Freud's views in the light of his early emphasis on sexuality. Anyone interested in verifying this statement need only glance at some of the articles or books written by major literary critics and authors within the last decade in the United States and in Europe. He will find that a very large percentage of these writers either state or assume that Freud's chief preoccupation is with sex.

Even if we make due allowance for what is sometimes called "cultural lag", and for the fact that laymen always find it difficult to keep abreast of the latest developments in science, we must admit that the failure of literary students interested in Freudianism in this respect demands further explanation. The same fact is observable quite apart from the question of Freud's influence on literature. It is a commonplace that the literature of western culture has been preoccupied with the theme of love from the earliest times. Some literary historians find the origin of this tendency in the middle ages, others trace it back to Greek mythology with its predominant interest in the loves of gods and demigods. Yet a survey of literature will show that artists have always been concerned with aggressive themes, too. War, murder, crime and other types of conflict between the individual and society have afforded the material for a very large proportion of literary works. Yet this fact has received much less discussion than the fact that sexual themes are to be found in literature. There are probably many

reasons for this, but recent psychoanalytic research has suggested a set of unconscious motives which we may note in passing. (1) According to this view the writer's basic unconscious conflict is heavily tinged with psychic masochism. Against this tendency he raises a pseudo-aggressive defense which accordingly finds expression in his work. But the ultimate goal of aggression is destruction and the writer, as we have seen, above all likes to be thought of as a creator, that is he likes to be thought of as someone who is dominated by love. The result is that the preoccupation with love and sex in his work is, from the unconscious point of view, a defense against a defense—a taking the blame for the lesser crime.

But although the misunderstandings with regard to Freud's views on sex are widespread among literary people, there have been critics and writers who have noted the error involved in such a misunderstanding. Another misconception which is more complicated and equally fundamental relates to Freud's view that works of art are products of neurosis and hence may be described as unconscious phantasies. The opposition which this view arouses cannot be due to the fact the Freud singles out the artist as a type of neurotic, among other types, different from the relatively normal person. In the past poets and critics have claimed, as a sort of special prerogative for the artist, that he is possessed of madness, divine enthusiasm, or special inspiration. Hesiod even goes so far as to say that the poets are liars. It is on this count that some critics have attacked the Freudian view. They claim that poetry must in some sense be "true" and that therefore Freud's contention that poetry is based on unconscious phantasy is untenable. Yet this reasoning, I believe, rests on a misconception. Freud does not contend that poetry is false. Quite the contrary, since it is precisely due to his researches that the charge of falsehood, as made by Plato, for example, can no longer be made against poetry. What Freud showed is that poetry can be true to inner experience. He does not deny that poetry may also be true to "outer"

experience in varying degrees. One can for example read *Hamlet* as a document telling us something about the social, political or economic conditions of Shakespeare's day. Freud simply contended that the most coherent level of meaning in a work of art will be found on that level which refers to unconscious states of mind.

But if Freud's view implies that poetry is true in this sense, why then does he insist that art is a "substitute gratification", that it deals in illusion? The obvious answer to this question is that when Freud uses these terms he is speaking as a physician who must acknowledge the fact that certain people produce the unconscious phantasies which form the basis of the work of art *because* they are suffering from unconscious mental conflict of the neurotic type. Other people who are suffering from other types of unconscious conflict simply do not produce such phantasies and do not evince much interest in them after they are produced. It is true that there is a value judgment involved in the distinction between the functioning of the "relatively normal" mind and that of the neurotic. But there is nothing arbitrary in this judgment. It is a judgment in which Freud takes the viewpoint of humanity in general: namely, that health is better than sickness.

Still one often hears artists and critics declaring that Freud has no right to impose this judgment on literature. They exclaim that the artist's view of "reality" is just as valuable, if not more so, as that of the normal person. There are several reasons why the artist makes this claim for his view of reality. Perhaps the most important one, from the unconscious point of view, however, is that the artist, like every neurotic, manifests considerable unconscious resistance to any attempt to endanger the permanence of his neurotic balance. This is true because the unconscious pleasure derived from the neurosis is more intense than that which is derived from health, just as the pain derived from neurosis is more self destructive than that incurred in the relatively normal functioning of the mind. When the artist contends,

therefore, that his view of reality is more valuable than that of the normal person he must be taken to mean that his view is more intense, and this no one denies. Intensity, however, is not a very good criterion for efficiency of function, as one can see in the instance of the bearing which burns itself out.

There is another point which should be mentioned in this connection. Writers and critics in opposing Freud's view that art is the product of inner conflict often declare that it disposes of all values. This is plainly not the case. Even the artists themselves admit that they are not the inventors of moral values, though they may or may not embody them in their work. Aesthetic values it would seem at first glance are dependent on works of art for their existence. But even here the possibility remains open that human beings may find beauty in objects not created by their fellow men, or at least not directly expressive of inner conflict. It may still be argued that the sense of beauty is in this case dependent on the observer's own inner conflict. This may be true, but we have here to consider the matter of degree again. The relatively normal person may find his sense of beauty less intense than that of the neurotic, but there is little danger that he will be totally incapable of it. The sublimation of his libidinous and aggressive tendencies has gone far enough to permit the realization of higher values, but not far enough to disturb the psychic balance which is called normality. On the other hand it is true that precisely those works of art which have been acclaimed as the greatest show the most profound sense of inner conflict. *The Iliad*, *The Aeneid*, *The Divine Comedy*, and *Hamlet* are but a few of the major examples of this observation.

Finally, Freud's view of art as phantasy has had to meet another charge. It has been said that such a view neglects or underestimates the fact, and it is a fact, that art has a social reference. It has also been said by way of definition of this social reference that the artist deals with material which is common to everybody. With regard to this latter point, however, I think, as has already been noted, that the

qualification must be added "everybody who has neurotic needs similar to those of the artist." Relatively normal people, whatever their mental constitution is, will and do lack an absorbing interest in art. There may be many reasons for this failure on the part of great artistic creations to attract some people, (each neurotic type has its own typical "solution" to conflict) but in some cases it seems at least possible that such people have no unconscious need for art. This is all the more likely when we consider that the number of people who do appreciate art is relatively small compared to those who do not. Still it must be admitted that works of art do have social reference. But there is no contradiction between this fact and the fact that art is based on unconscious phantasies. For the social reference of a poem must be derived chiefly from the conscious mind of the poet. It is only here that the adult acquires enough information to enable him to realize what society is. His unconscious phantasies, however, have been fixed long before his adult life. They are the expression of the mind of the child, and for the child society is strictly limited to parent images—a very rudimentary society indeed. The degree of control which the artist has over his unconscious phantasies—the social element which distinguishes art from dream—is chiefly dependent on his conscious understanding of what is unconscious in him. Examination of the way poems are composed and what they contain, plus clinical evidence with respect to neurotic behavior, shows that in some cases at least this control and consequent social reference is not very great.

We may now turn to another conception of Freud's to which literary people have been attracted. This is his discovery of unconscious ambivalence. It is perhaps not too much to say that a whole school of literary criticism, sometimes called the "new criticism" has been built upon this discovery. Terms such as irony, ambiguity, multivalence, and "richness of texture" which have been used extensively to indicate the complexity of poetry are based upon Freud's

discovery of the complexity of the unconscious. Some misconceptions have arisen in the use of these terms which it may be worthwhile to note briefly. It has been argued, and this especially by academic critics, that the application of Freud's term ambivalence to a work of art makes nonsense out of the simple meaning of the work. It is true that some literary critics have in their interpretations multiplied meanings of particular parts of the work without much regard to larger patterns of meaning. But Freud's concept of ambivalence has nothing to do with the interpretation of works of art in this manner. Ambivalence is a term designating the clinical fact that neurotics unconsciously attach contrary emotions to the same object. Thus a person may have libidinous attachment for a parent image and at the same time feel aggressive toward it. This does not mean that psychoanalysis "can have it both ways", much less that when ambivalence is apparent in a work of art that we are entitled to proliferate meanings and then leave the matter at that. Ambivalence is a term which is only relevant when used within the framework of unconscious neurotic patterns. When detached from these larger patterns it has lost the value which Freud originally gave it.

In what has been said so far I have attempted to give a brief resumé of some of the more important misconceptions of Freudian theory as interpreted by critics and writers. I shall now mention a few respects in which Freudian influence is supposed to have affected actual works of art. Perhaps the most obvious characteristic of contemporary literature which is somehow to be correlated with Freud's influence is its obscurity, even unintelligibility to the average reader. There are, of course, other reasons than those traceable to Freudian influence for this obscurity, but insofar as psychoanalysis is responsible, it has usually been argued that the unintelligibility of contemporary literature parallels Freud's investigation of the unintelligibility of dreams. Both writers and critics have often asserted that this obscurity which permeates contemporary works of art is the result of

a conscious attempt to imitate the deeper strata of the psyche and thus to represent the vivid reality of unconscious dream life. Thus James Joyce's *Finnigan's Wake*, perhaps the most extreme example of contemporary writing impenetrable to ordinary understanding, has often been said to be written in dream language. It has even been asserted, naively no doubt, that writers such as Joyce were aware of the contents of their own unconscious in producing their works. There is no need to discuss the contradiction in terms involved here. It is sufficient to state that no contemporary writer, no matter how thoroughly acquainted with the writings of Freud, could acquire much knowledge of his own unconscious outside of clinical psychoanalysis.

But even if one grants that some writers were consciously influenced by the writings of Freud, one is still at a loss to explain the obscurity which appears in their work. What value is there for poet or reader in the imitation of dream life? One could doubtless suggest answers to this question in terms of social significance or the artist's interest in truth. Still it seems strange that artists should have abandoned their struggle to impose intelligibility on unconscious tendencies precisely at the time when Freud was beginning to describe the unconscious scientifically. We must remember that the artist *expresses* rather than dominates his unconscious. The latter is only possible with the aid of scientific knowledge. Sophocles, for example, gave perfect expression to the oedipus complex, but more than two thousand years elapsed before Freud described it and made it accessible to therapy. It seems possible, therefore, that the tendency toward obscurity in modern art may, from the unconscious point of view, be an effect of neurotic resistance. Most of the leaders in this flight into obscurity were people who had some opportunity to hear of the success of Freud's theories and therapy. If this reasoning should be true it may mean that artists will henceforth find it difficult to return to the simple, straightforward style of traditional poetry. On the other hand it is well to remember that the first frightening impact of science

on the poetry of the seventeenth century was followed by the reassuring calm of the eighteenth century.

This brings us to mention one last misconception about the relation of Freudianism to the artist's work. There is a widespread belief that psychoanalysis is capable of destroying the artistic gift. This at first seems like a logical deduction in view of the fact that in the case of the writer, for example, his artistic productivity has been traced to a specific neurotic pattern. But though the writer's ability to produce words in quantity is based on a particular aspect of inner conflict, this in itself does not constitute a social maladjustment. On the contrary, the writer holds an honored, though not always remunerative, position in our culture. Psychoanalysis therefore cannot render him "maladjusted" in this respect. It can only help him with those inner conflicts which are maladjustments. It may be true that in the judgment of some people his work after treatment is less valuable than before treatment. But this is unlikely since a successful analysis will relieve the writer of precisely those difficulties which hamper his creative abilities.

In spite of the misunderstandings which have here been summarized it remains to be said that some artists have shown real insight into the importance of Freud's work for the future. Chief among these is Thomas Mann, and one might name others who have been equally sympathetic. It is such people who justify Freud's own very profound respect for the artist and his role in society.

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(1) See Edmund Bergler, *The Basic Neurosis*, pp. 186-193. Grune & Stratton, 1949.